

**Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554**

In the Matter of:)	
)	
International Bureau Seeks Comment on)	IB Docket No. 16-185
Recommendations Approved by World)	
Radiocommunication Conference)	
Advisory Committee)	

COMMENTS OF CTIA

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CTIA¹ respectfully submits these comments in response to the Public Notice seeking comment on the draft recommendations and draft proposals provided by the World Radiocommunication Conference Advisory Committee (“WAC”) on agenda items and proposed future agenda items that will be considered at the 2019 World Radiocommunication Conference (“WRC-19”).²

I. INTRODUCTION AND SUMMARY.

The Federal Communications Commission (“Commission”) is a world leader in spectrum policy, often moving quickly to provide the benefits of new technologies to U.S. businesses and consumers. And as the October 2018 Presidential Memorandum made clear, “it is imperative that America be first in fifth-generation (5G) wireless technologies . . . that can unleash

¹ CTIA® (www.ctia.org) represents the U.S. wireless communications industry and the companies throughout the mobile ecosystem that enable Americans to lead a 21st century connected life. The association’s members include wireless carriers, device manufacturers, suppliers as well as apps and content companies. CTIA vigorously advocates at all levels of government for policies that foster continued wireless innovation and investment. The association also coordinates the industry’s voluntary best practices, hosts educational events that promote the wireless industry and co-produces the industry’s leading wireless tradeshow. CTIA was founded in 1984 and is based in Washington, D.C.

² *International Bureau Seeks Comment on Recommendations Approved by World Radiocommunication Conference Advisory Committee*, Public Notice, IB Docket No. 16-185, DA 18-1017 (rel. Oct. 3, 2018) (“Public Notice”).

innovation broadly across diverse sectors of the economy.”³ Consistent with recent Commission and Administration action, the overarching goal as the U.S. prepares for WRC-19 should be to ensure that our international efforts support 5G deployment here at home. To achieve this goal, the U.S. should prioritize obtaining International Mobile Telecommunications (“IMT”) identifications, and mobile allocations where necessary, covering the frequency ranges the Commission has made available that are most likely to be globally harmonized at WRC-19 – the 24.25-27.5 GHz and 37-43.5 GHz frequency ranges – without overly conservative emission limits or operational constraints.⁴ Additionally, U.S. proposals related to other services and applications should include the appropriate protections for the fixed and mobile services, particularly including the Agenda Item 1.5 earth stations in motion proposals and Agenda Item 1.14 high-altitude platform system proposals, which overlap with bands the Commission has made available for 5G and that are critical components of U.S. wireless providers’ 5G deployment plans.

Regarding the draft recommendations and draft proposals presented at the March WAC meeting, the Commission should:

- **Ensure that any Future Agenda Item proposals align with United States Priorities.** The Commission should support proposed Future Agenda Items only to the extent they align with U.S. priorities, giving particular scrutiny to the targeted bands and services. Several proposed Future Agenda Items propose study of overlapping bands, many of which the Commission has already identified for 5G, for a variety of different services.

³ See Presidential Memorandum on Developing a Sustainable Spectrum Strategy for America’s Future, Section 1 (issued Oct. 25, 2018), <https://www.whitehouse.gov/presidentialactions/presidential-memorandum-developing-sustainable-spectrum-strategy-americas-future/>.

⁴ Specifically, the U.S. should continue to support its proposals for the 24.25-27.5 GHz and 37-43.5 GHz bands that were submitted to the April 2019 CITEL PCC.II meeting. See U.S. Contributions Sent to CITEL PCC.II, <https://www.fcc.gov/us-contributions-sent-citel-pccii-0> (“usa_proposal_1.13_26_ghz.doc” and “usa_proposal_1.13_37_43.5_ghz.doc”).

- **Support identifying additional frequency bands for IMT.** Recognizing the need for additional spectrum for 5G, the U.S. has acted to make spectrum available for flexible terrestrial use in the 47.2-48.2 GHz band. Following the U.S. lead, other countries are beginning to look at adjacent spectrum in order to take advantage of economies of scale, which could be generated in conjunction with the U.S. band. The U.S. should submit a proposal to the April CITEL meeting for an IMT identification in the 45.5-47.2 GHz band to support a globally harmonized frequency range, which will drive economies of scale and facilitate global roaming to the benefit of U.S. consumers and businesses.

Consistent with the Presidential Memorandum and Chairman Pai’s strategy to Facilitate America’s Superiority in 5G Technology (the “5G FAST Plan”), U.S. leadership extend to ensuring that sufficient spectrum is made available at WRC-19 for globally harmonized, flexible 5G use in a manner that aligns with U.S. priorities and safeguard against actions that would undermine the use of key 5G bands here in the United States.

II. THE U.S. WIRELESS INDUSTRY PROVIDES TREMENDOUS ECONOMIC BENEFITS.

The United States reaped huge economic gains from leading in 4G, including the creation of millions of new jobs. The U.S. wireless industry GDP grew from \$195.5 billion in 2011 to \$332.9 billion in 2014, when 4G reached 40 percent penetration in the U.S, with 4G leadership directly accounting for \$43.6 billion of this increase.⁵ By 2016, the U.S. wireless industry contributed \$475 billion to the economy annually, or 2.6 percent of total U.S GDP, with leadership in 4G accounting for a nearly \$100 billion increase in annual GDP.⁶ The launch of 4G in the United States also increased total wireless-related jobs by 84 percent from 2011 to 2014.⁷ The wireless industry currently supports 4.7 million American jobs, with each direct

⁵ *How America’s Leading Position in 4G Propelled the Economy*, RECON ANALYTICS, at 9 (Apr. 16, 2018), https://api.ctia.org/wp-content/uploads/2018/04/Recon-Analytics_How-Americas-4G-LeadershipPropelled-US-Economy_2018.pdf.

⁶ *Id.*

⁷ *Id.* at 10.

wireless job resulting in a total employment multiplier effect of 7.7x.⁸ Moreover, winning the 4G race helped secure America's leading position in key parts of the global wireless ecosystem, including the app economy.⁹

Our nation's wireless industry is expected to invest \$275 billion into building next-generation 5G networks,¹⁰ resulting in a projected three million new jobs and boosting GDP by \$500 billion.¹¹ The transition to 5G networks and services also will accelerate growth of IoT, as consumers and businesses adopt new applications and uses that will enable connected homes, cities, cars, and lives. For example, Ericsson estimates that cellular IoT connections will reach 213 million by 2022, accounting for more than 30 percent of all cellular connections.¹² The increase in connected devices due to 5G could create as much as \$305 billion in annual health system savings,¹³ and the Smart City solutions facilitated by 5G could produce \$160 billion in benefits and savings through reductions in energy usage, traffic congestion, and fuel costs.¹⁴

⁸ *How the Wireless Industry Powers the U.S. Economy*, ACCENTURE STRATEGY (Apr. 2018), <https://api.ctia.org/wpcontent/uploads/2018/04/Accenture-Strategy-Wireless-Industry-Powers-US-Economy-2018-POV.pdf>.

⁹ *How America's Leading Position in 4G Propelled the Economy*, RECON ANALYTICS, at 11-12 (Apr. 16, 2018), https://api.ctia.org/wp-content/uploads/2018/04/Recon-Analytics_How-Americas-4G-LeadershipPropelled-US-Economy_2018.pdf.

¹⁰ *CTIA Wireless Industry Indices Report* (2018).

¹¹ *The Global Race to 5G*, CTIA, at 2 (Apr. 2018), <https://api.ctia.org/wp-content/uploads/2018/04/Raceto-5G-Report.pdf>.

¹² *Ericsson Mobility Report*, ERICSSON, at 33 (June 2017), <https://www.ericsson.com/assets/local/mobility-report/documents/2017/ericsson-mobility-report-june-2017-north-america.pdf>.

¹³ *The Digital Revolution comes to US Healthcare*, GOLDMAN SACHS (June 2015) <https://www.anderson.ucla.edu/Documents/areas/adm/acis/library/DigitalRevolutionGS.pdf>.

¹⁴ *How 5G Can Help Municipalities Become Vibrant Smart Cities*, ACCENTURE STRATEGY (Jan. 2017), <https://api.ctia.org/docs/default-source/default-document-library/how-5g-can-help-municipalities-become-vibrant-smart-cities-accenture.pdf>.

5G deployment is already well underway in the United States. AT&T launched mobile 5G services in a dozen cities in 2018 and intends to launch in nine more cities in the first half of 2019.¹⁵ Sprint will launch commercial mobile 5G services in four cities in May 2019, with five additional cities launching in the first half of 2019.¹⁶ T-Mobile has announced that 5G commercial services on 5G handsets will be available in 30 cities on its network in the second half of 2019.¹⁷ Verizon will launch mobile 5G in two cities on April 11, with 30 more markets set to launch in 2019,¹⁸ in addition to previously announced fixed 5G commercial services available in five cities starting in 2018.¹⁹

III. THE UNITED STATES SHOULD PRIORITIZE 5G IN THE 24.25-28.35 GHz AND 37-43.5 GHz FREQUENCY RANGES IN WRC-19 PREPARATIONS.

Given the overwhelming benefits associated with the growth of 4G and the projected benefits of 5G, it is imperative that the U.S. continues to lead as the world transitions to 5G, both domestically and internationally. In the context of WRC-19, that translates to supporting IMT identifications for the 24.25-27.5 GHz and 37-43.5 GHz ranges without overly conservative

¹⁵ 50+ Days of 5G: AT&T Provides Update, Press Release (Feb. 12, 2019), https://about.att.com/story/2019/50_days_of_5g.html; AT&T First to Make Mobile 5G Service Live in the U.S. on Dec. 21, Press Release (Dec. 18, 2018), https://about.att.com/story/2018/att_brings_5g_service_to_us.html.

¹⁶ Sprint Announces Commercial 5G Service to Launch in May Starting in Chicago, Atlanta, Dallas and Kansas City, Press Release (Feb. 25, 2019), <https://newsroom.sprint.com/sprint-announces-commercial-5g-service-to-launch-in-may-starting-in-chicago-atlanta-dallas-and-kansas-city.htm>.

¹⁷ R. Cheng, T-Mobile 5G Launch, cnet (Feb. 25, 2019), <https://www.cnet.com/news/t-mobile-delays-full-600-mhz-5g-launch-until-second-half/>.

¹⁸ Verizon 5G Mobility Service and Motorola 5G Smartphone Are Here, Press Release (Mar. 13, 2019), <https://www.verizon.com/about/news/verizon-5g-mobility-service-and-motorola-5g-smartphone-are-here>.

¹⁹ Verizon Outlines 5G-Era Growth Strategy at Investor Conference, Press Release (Feb. 21, 2019), <https://www.verizon.com/about/news/verizon-outlines-5g-era-growth-strategy-investor-conference>.

restrictions and ensuring that actions to enable other services include necessary protections for fixed and mobile services in key U.S. 5G bands.

A. The United States Should Focus Its Efforts on Securing IMT Identifications in the 24.25-27.5 GHz and 37-43.5 GHz Bands Without Overly Conservative Restrictions.

The U.S. should support its proposals to identify the 24.25-27.5 GHz and 37-43.5 GHz ranges for IMT in all three regions, along with the addition of international co-primary mobile allocations where necessary, and without overly restrictive emission limits to protect services in adjacent bands.²⁰ The most promising candidate bands for global harmonization at WRC-19 are the 24-27.5 GHz and 37-43.5 GHz ranges. Those ranges include the 24 GHz, 37 GHz, and 39 GHz bands that the Commission has already made available, as well as the 26 GHz and 42-42.5 GHz bands that remain under consideration in the Commission's Spectrum Frontiers proceeding. Therefore, the United States should prioritize these two frequency ranges as we approach WRC-19.

Continued support for identifying the full 24.25-27.5 GHz and 37-43.5 GHz frequency ranges for IMT will be important for U.S. success at WRC-19, as it allows different countries and regions to make different portions of spectrum available within the ranges while still reaping the benefits of global harmonization. While the U.S. is moving forward with the 24.25-24.45 GHz, 24.75-25.25 GHz, and 27.5-28.35 GHz ranges and continuing to study the 25.25-27.5 GHz band for 5G, other countries are making various segments of the 24.25-29.5 GHz frequency range available.²¹ Supporting an IMT identification for the full 24.25-27.5 GHz frequency range

²⁰ See U.S. Contributions Sent to CITEL PCC.II, <https://www.fcc.gov/us-contributions-sent-citel-pccii-0> ("usa_proposal_1.13_26_ghz.doc" and "usa_proposal_1.13_37_43.5_ghz.doc").

²¹ Note that the 26 GHz band and 42-42.5 GHz bands are also still under consideration in the Commission's Spectrum Frontiers proceeding.

will ensure that U.S. businesses and consumers are able to reap the benefits of global roaming and economies of scale. Similarly, in the 37-43.5 GHz frequency range, the U.S. has made the 37-40 GHz bands available and is continuing the study the 42-42.5 GHz band for 5G, while other countries are moving forward with various portions of the spectrum between 40-43.5 GHz. Continued support for identifying IMT across the full 24.25-27.5 GHz and 37-43.5 GHz frequency ranges will be imperative for both bands to ensure the U.S. bands are not left out at WRC-19.

The U.S. should also continue to oppose any Resolutions mandating operational characteristics for IMT in the bands. A one-size-fits-all approach is unworkable in our diverse, global ecosystem, and it does not make sense to memorialize prescriptive operating procedures in the Radio Regulations, which can only be amended at World Radiocommunication Conferences. This is especially true in an era of rapidly evolving technologies. Instead, the U.S. should continue to protect the flexibility in the Radio Regulations regarding operational characteristics for IMT.

B. The U.S. Should Advance the Agenda Item 1.13 Proposals to Identify the 45.5-47.2 GHz and 50.4-52.6 GHz Ranges For IMT.

The WAC advanced two alternative views each on identifying the 45.5-47.2 GHz and 50.4-52.6 GHz ranges for IMT at the March meeting. Regarding the 45.5-47.2 GHz range, View A proposes identifying the range for IMT, while View B proposes no change for the band.²² The U.S. should advance the View A proposal to identify the band for IMT. The 45.5-47.2 GHz range is adjacent to the 47.2-48.2 GHz band that the Commission has already made available for 5G in the United States. An IMT identification in the 45.5-47.2 GHz band adjacent to the 47.2-

²² Document WAC/082 (11.03.19).

48.2 GHz band allotted in U.S. would help to drive development of a global market to create products for the band, which is particularly important here given that no other countries have yet identified spectrum in or nearby 47.2-48.2 GHz for 5G.

Portions of the 45.5-47.2 GHz band are allocated to the Mobile Satellite Service (“MSS”), Radionavigation Service (“RNS”), Radionavigation Satellite Service (“RNSS”), Amateur Radio Service (“ARS”), and Amateur-Satellite Service (“ARSS”). While studies within Task Group 5/1 focused on the 26 GHz and 40 GHz ranges given international priorities at the time, studies submitted to the Conference Preparatory Meeting 19-2 in Geneva show that large interference margins exist for the protection of MSS.²³ Specifically, the sharing studies indicate that for MSS uplink, there is a large positive margin between aggregate interference from IMT and any MSS protection criteria. For MSS downlink, separation distances are small, and protection of MSS earth stations can be addressed on a national or case-by-case basis.²⁴ The relevant groups did not provide characteristics to Task Group 5/1 for RNS or RNSS, and thus no studies regarding the services were performed.²⁵ Regarding the ARS and ARSS allocations in the 47-47.2 GHz band,²⁶ any use by IMT would take these allocations into account, noting the short propagation distances and that the ARS and ARSS are able to coexist in other frequency bands with much higher power use than by IMT systems, such as the Industrial Scientific and Medical applications in the 24-24.05 GHz band and Radiolocation Services in the 77.5-78 GHz

²³ Note that the studies are based on theoretical characteristics provided by the MSS community, rather than characteristics based on actual systems, given the lack of MSS deployment in the band.

²⁴ CPM 19-2 Report, Section 2/1.13/3.2.5, View 1, at 181.

²⁵ CPM 19-2 Report, Section 2/1.13/3.2.5, at 181.

²⁶ Similarly, no characteristics regarding ARS or ARSS were provided, and thus no studies were conducted.

band. For the reasons explained above, the U.S. should not support a WRC Resolution specifying operational constraints on IMT associated with this proposed IMT identification.

The U.S. should also advance the View A proposal to identify the 50.4-52.6 GHz band for IMT. Sharing studies between IMT and the Fixed Satellite Service (“FSS”) conducted within Task Group 5/1 showed that sharing was feasible. Studies between the same services for the same frequencies conducted under WRC-19 agenda item 9.1, Issue 9.1.9 found even better results with no need for technical constraints:

[S]eparation distances between FSS earth stations and IMT base station and IMT user equipment are 260 and 330 metres, respectively. These values may be further reduced by consideration of propagation losses other than free space, the pointing of the IMT-2020 antennas in directions other than that of the FSS earth station, and the high likelihood that the antenna pattern of the FSS earth station is more directive than the 29-25 log θ pattern assumed in the analysis.²⁷

Based on the results of these studies, sharing between IMT and FSS in this band is feasible and decisions regarding use of the band should be a national issue. Regarding the passive services in the 50.2-50.4 GHz band, Radio Regulations No. 5.340.1 specifies that, “The allocation to the Earth exploration-satellite service (passive) and the space research service (passive) in the band 50.2-50.4 GHz should not impose undue constraints on the use of the adjacent bands by the primary allocated services in those bands.” The U.S. should therefore reject the View B proposal and federal agency proposals for no change to the Radio Regulations

²⁷ CPM 19-2 Report, 3/9.1.9/3.3, at 648-49. Note that Document WAC/088 (11.03.19) proposes an allocation in the 51.4-52.4 GHz band to the FSS (Earth-to-Space), limited to feeder links for geostationary satellite networks under Agenda Item 9.1/issue 9.1.9. While the proposed allocation would be limited to feeder links, the proposal contemplates earth stations as small as 2.4 m, which is not consistent with a typical feeder link deployment. Further, the ITU-R studies conducted pursuant to the issue 9.1.9 were based on larger 4.5 m earth stations and found required separation distances of 33 km to protect FS stations. See CPM 19-2 Report, 3/9.1.9/3.3, at 648. Study of 2.5 m earth stations or results finding required separation distances of 35 km are not reflected in the CPM 19-2 Report.

for this band based on the results of sharing studies between IMT in the 47.2-50.2 GHz band and the passive services in the 50.2-50.4 GHz as inconsistent with No. 5.340.1.

The Commission should also reject the View B argument that the spectrum needs for IMT in the 37-52.6 GHz frequency range have been met. View B cites to spectrum needs studies showing that 6.1 GHz of spectrum is needed in the range for IMT and states that the U.S. has proposed to make 7.5 GHz of spectrum available within the range under its existing proposals for the 37-43.5 GHz and 47.2-48.2 GHz bands. However, the U.S. has not made the entirety of those bands available for 5G domestically, nor can it guarantee success in obtaining IMT identifications consistent with its proposals at WRC-19. Further, View B only cites to the results of one of the many approaches to studying spectrum needs presented in the CPM Report, while other approaches found that as much as 12 gigahertz or even 33.33 gigahertz of spectrum are necessary.²⁸

C. The U.S. Should Ensure That Proposals for Earth Stations in Motion and High-Altitude Platform Systems Contain Appropriate Protections for the Fixed and Mobile Services.

U.S. proposals related to other services and applications must include the appropriate protections for the fixed and mobile services. Specifically, any proposal under Agenda Item 1.5 for earth stations in motion (ESIM) or Agenda Item 1.14 for high-altitude platform systems (HAPS), particularly to the extent they overlap with bands the Commission has made available for 5G in the United States, must adequately protect the fixed and mobile services. In accordance with Resolution 158 (WRC-15), the WRC-15 decision which invites study of

²⁸ CPM Report on Technical, Operational and Regulatory/Procedural Matters to Be Considered by the World Radiocommunication Conference 2019, Section 2/1.13/3.1, Table 2/1.13/3-1, Spectrum Needs for Frequency Ranges Between 24.25 and 86 GHz, International Telecommunication Union, at 159-160 (March 2019) (“CPM 19-2 Report”).

potential ESIM operations, “ESIM[s] need to protect the existing services and their future development without undue constraints,” including fixed and mobile services in the 27.5-29.5 GHz band. The CPM 19-2 Report makes clear that because ITU-R studies “concluded there would be potential interference to receiving stations of terrestrial services from ESIM transmitters...[,] aeronautical and maritime ESIM should operate under the specified technical, operational and regulatory conditions to avoid causing unacceptable interference.”²⁹

Aeronautical ESIM proponents have supported a protection mask that only considers one of the two mobile systems operating in the 28 GHz band provided by the expert group on mobile broadband, Working Party 5A (WP5A), while not taking the second system into account at all. Disregarding specific systems when developing protection measures for other services would set a new, negative precedent at the ITU and the Commission should reject this approach. The Commission instead should advance the composite pfd mask for aeronautical ESIMs that utilizes the appropriate formula provided by WP5A and the technical characteristics for both mobile broadband systems that WP5A provided, which is presented as Option 2 in the relevant section of the CPM 19-2 Report.³⁰

IV. THE UNITED STATES SHOULD ENSURE FUTURE AGENDA ITEM PROPOSALS ALIGN WITH UNITED STATES PRIORITIES.

As the Commission considers the proposed Future Agenda Items submitted to the WAC, it should closely scrutinize the targeted bands and services and ensure that any proposals align with U.S. priorities and do not send unintended messages to the international community. The U.S. should also seek to avoid overlapping WRC-23 Agenda Items, in which different agenda

²⁹ CPM 19-2 Report, Section 3/1.5/3.2.2, at 422.

³⁰ CPM 19-2 Report, 3/1.5/5, Annex 2 to Draft New Resolution [A15] (WRC-19), Section 2.1, Option 2, at 435.

items would study the same or overlapping bands for different services. Notably, several proposed Future Agenda Items are seeking to introduce additional services into the key bands that the Commission has made available for 5G in the United States. The U.S. should be clear that it will prioritize 5G in these bands, which are critical for U.S. leadership in the next generation of advanced wireless services.

Specifically, one proposal seeks to introduce ESIMs communicating with non-geostationary orbit (“NGSO”) satellites in nearly all of the bands made available for 5G in the Commission’s Spectrum Frontiers proceeding and many of the bands under consideration in Agenda Item 1.13, including the 27.5-30 GHz, 37-42.5 GHz, 47.2-50.2 GHz, and 50.4-51.4 GHz bands.³¹ ESIMs communicating with NGSO systems create an even more challenging interference environment than ESIMs communicating with geostationary orbit satellites. The Commission should proceed cautiously in considering whether it is consistent with U.S. priorities to introduce study of such operations in the key 5G bands in the United States, recognizing that it is imperative to protect 5G systems from interference.

The Commission should also reconsider whether it is consistent with U.S. policy and priorities to advance the Future Agenda Item seeking to add a primary allocation for reverse direction FSS feeder links to the 37.5-39.5 GHz band.³² While the proposal was included as a WRC-23 preliminary agenda item at WRC-15, Commission action since 2015 to make the band available for 5G in the Spectrum Frontiers proceeding and to prioritize the band for an IMT identification internationally warrant a new approach. Further, the CPM 19-2 Report makes

³¹ Document WAC/093 (11.03.19).

³² Document WAC/090 (11.03.19).

clear that if WRC-19 allocates the 51.4-52.4 GHz band for FSS feeder links under WRC-19 agenda item 9.1/issue 9.1.9, the spectrum requirements for FSS feeder links will have been met.³³ The proposed Future Agenda Item to make the 70 GHz and 80 GHz bands available for NGSO FSS use similarly warrants scrutiny given the importance of those bands for 5G backhaul, as well the existence of automotive radars in the spectrum and adjacent band passive services.³⁴ Further, it is unclear whether this spectrum is needed for NGSO FSS use, particularly given potential actions at WRC-19 to make spectrum available for NGSO systems.

The proposed Future Agenda Item to study potential Electronic News Gathering (ENG)/Program Making and Special Event (PSME) operations in the 150 MHz to 2 GHz range is overly broad, overlaps with several key bands allocated for and licensed to mobile broadband providers as well as other important services, is unnecessary, and should not be advanced.³⁵ As a threshold matter, the United States should not support studying introduction of ENG services into bands allocated to the mobile service, as the incompatibility of co-channel spectrum sharing between professional wireless microphones and mobile broadband networks is well established.³⁶ However, the Future Agenda Item is unnecessary in any event, as Resolution ITU-

³³ CPM Report 19-2, Section 6/10/4, WRC-23 Preliminary Agenda Item 2.4 – Resolution 161 (WRC-15), at 874 (“With a positive decision by WRC-19 on issue 9.1.9 and allocation of the frequency band 51.4-52.4 for the FSS (Earth-space, limited to FSS feeder links for geostationary orbit use) the current spectrum requirements of the GSO FSS feeder links (Earth-to-space) can be fully satisfied. The intensive use of the frequency band 37.5-39.5 GHz by fixed service stations and outcome of WRC-19 on agenda item 1.13 should be considered.”).

³⁴ Document WAC/094 (11.03.19).

³⁵ Document WAC/085 (11.03.19).

³⁶ “Certain wireless microphones can create interference over spectrum bands used for critical public safety communications and wireless broadband services. To preserve the integrity of those communications the FCC prohibits the use of wireless microphones and similar devices that operate between 698 and 806 MHz.” FCC, Wireless Microphone, <https://www.fcc.gov/general/wireless->

R 59-1 already called for studies on availability of frequency bands for harmonized ENG operations, which were completed just over one year ago in Report ITU-R BT.2069-7. Everything the proponents of the Future Agenda Item seek has already been completed or can be accomplished under the existing Resolution, Report, and Recommendation.

Finally, the proposed Future Agenda Item to study communications between NGSO and GSO space stations as an application of the fixed satellite service would be an inappropriate expansion of the FSS definition.³⁷ There can be no doubt that under both the definition and plain meaning of the inter-satellite service that communications between space stations, including between NGSO and GSO space stations, fall squarely in the inter-satellite service.³⁸ The Commission should reject efforts to fundamentally change the meaning of a key term in the Radio Regulations, whether through action under the Director's Report or through a Future Agenda Item. Historically, studies have shown that it is more difficult to share with ISS than FS, and any inter-satellite communications should be limited to bands that have been allocated for ISS. Further, the proposed Future Agenda Item seeks to introduce such communications into the 27.5-30 GHz, 47.2-50.2 GHz, and 50.4-51.4 GHz bands, all of which have been made available for 5G domestically or are under consideration, in whole or in part. The Commission should take U.S. priorities into account when considering whether to advance a future agenda item to study sharing between the two services.

[microphone](https://www.fcc.gov/wireless/bureau-divisions/mobility-division/wireless-microphones). See also FCC, Wireless Bureau, Mobility Division, Wireless Microphones, <https://www.fcc.gov/wireless/bureau-divisions/mobility-division/wireless-microphones>.

³⁷ Document WAC/089 (11.03.19).

³⁸ “*inter-satellite service*: A radiocommunication service providing links between artificial satellites.” Radio Regulations Article 1.22.

V. CONCLUSION.

Consistent with the Presidential Memorandum and Chairman Pai's 5G FAST Plan, the United States should ensure that sufficient spectrum is identified at WRC-19 for globally harmonized, flexible 5G use in a manner that aligns with U.S. priorities, consistent with the comments set forth above.

Respectfully Submitted,

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